AMENDMENT

Please replace all prior versions and listings of claims with the following listing of claims.

LISTING OF CLAIMS:

1.   (**Currently Amended**)   A computer-implemented system for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of network components, the service having a state, the system comprising:

multiple monitoring agents [[to]] that each monitor a respective aspect of operation of one or more of the network components, wherein each monitoring agent detects one or more events relative to in the respective monitored aspect of operation and generates alarms an alarm as a function of the one or more detected events; and

an alarm correlation agent that receives the generated alarms from the monitoring agents, wherein the alarm correlation agent that determines a current state of the service based on the received alarms originating from the subset of the plurality of network components and, that issues one or more instructions to autonomously establish a desired desirable state of the service when the current state of the service is undesirable.

2.   (**Original**) The system of claim 1, wherein the monitoring agents comprise at least one of:

an infrastructure monitoring agent to monitor operation of the network infrastructure;

a computer system monitoring agent to monitor operation of at least one computer system on the network;

a network traffic monitoring agent to monitor traffic on the network;

an application monitoring agent to monitor operation of at least one application operating on the network;

a trouble-ticketing agent to receive reports of problems by users with respect to operation of the network;

a response time monitoring agent to monitor a response time of a communication on the network;

a device monitoring agent to monitor operation of a device on the network; and

a multicomponent monitoring agent comprising an aggregate of any of the above monitoring agents.

3.   (**Currently Amended**) The system of claim 1, wherein the monitoring agents and <u>the</u> alarm correlation <u>agent</u> ~~agents~~ comprise reasoning agents.

4.   (**Original**) The system of claim 3, wherein the reasoning agents comprise one or more of:

a rule-based reasoning agent;

a model-based reasoning agent;

a state-transition graph based reasoning agent;

a code book based reasoning agent; and

a case-based reasoning agent.

5.   (**Currently Amended**) The system of claim 1, comprising:

an alarm repository ~~to receive~~ <u>that receives</u> the ~~one or more~~ <u>generated</u> alarms from the monitoring agents, wherein the alarm correlation agent ~~reads~~ <u>analyzes</u> the alarms in the alarm repository.

6.   (**Currently Amended**) A computer-implemented system for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of network components, the service having a state, the system comprising:

a first monitoring agent that monitors a ~~respective~~ first aspect of operation of <u>one or more of</u> the network <u>components, wherein</u> the first monitoring agent <u>detects</u> ~~detecting one or~~

~~more~~ events ~~relative to~~ in the first monitored aspect of operation and generates alarms ~~generating an alarm~~ as a function of the ~~one or more~~ detected events;

a second monitoring agent that monitors a ~~respective~~ second aspect of operation of one or more of the network components, wherein the second aspect is different from the first aspect, and wherein the second monitoring agent detects ~~detecting one or more~~ events ~~relative to~~ in the second monitored aspect of operation and generates alarms ~~generating an alarm~~ as a function of the ~~one or more~~ detected events;

an alarm repository that receives the generated ~~one or more~~ alarms from ~~each of~~ the first and second monitoring agents; and

an alarm correlation agent that ~~reads~~ analyzes at least the ~~one or more~~ received alarms in the alarm repository, ~~and that~~ determines a current state of the service based on ~~from~~ the ~~read one or more~~ analyzed alarms ~~that originate from the subset of the plurality of network components, wherein the alarm correlation agent is operative to issue,~~ and issues one or more instructions to autonomously establish a ~~desired~~ desirable state of the service when the current state of the service is undesirable.

7-8.   (Cancelled)

9.   (Currently Amended) The system of claim 6, wherein the first and second monitoring agents comprise at least one ~~or more~~ of:

an infrastructure monitoring agent to monitor operation of the network infrastructure;

a computer system monitoring agent to monitor operation of at least one computer system on the network;

a network traffic monitoring agent to monitor traffic on the network;

an application monitoring agent to monitor operation of at least one application operating on the network;

a trouble-ticketing agent to receive reports of problems by users with respect to operation of the network;

a response time monitoring agent to monitor a response time of a communication on the network;

a device monitoring agent to monitor operation of a device on the network; and

a multicomponent monitoring agent comprising an aggregate of any of the above monitoring agents.

10.   (**Currently Amended**) The system of claim 6, wherein the ~~first and second~~ monitoring agents and the alarm correlation agent comprise <u>reasoning agents, wherein the reasoning agents comprise</u> one or more of:

a rule-based reasoning agent;

a model-based reasoning agent;

a state-transition graph based reasoning agent;

a code book based reasoning agent; and

a case-based reasoning agent.

11.   (**Currently Amended**)   A computer-implemented system for providing service level management in a network ~~having at least one monitoring agent to monitor at least one aspect of operation and to generate an alarm as a function of one or more detected events~~, wherein the network includes a plurality of network components[[,]] <u>and at least one monitoring agent that monitors an aspect of operation of one or more of the network components, wherein the monitoring agent detects events in the monitored aspect of operation and generates alarms as a function of the detected events,</u> and wherein a service operates on a subset of the plurality of network components, the service having a state, the system comprising:

an alarm correlation agent that receives <u>the generated</u> alarms from the ~~at least one~~ monitoring agent<u>, wherein the alarm correlation agent determines</u> ~~to determine~~ a current state of the service based on <u>the received</u> alarms ~~originating from the subset of the plurality of network components~~ and ~~that~~ issues one or more instructions to autonomously establish a ~~desired~~ <u>desirable</u> state of the service when the current state of the service is undesirable.

12.   (**Currently Amended**) The system of claim 11, wherein the alarm correlation agent comprises one or more of:

    a rule-based reasoning agent;

    a model-based reasoning agent;

    a state-transition graph based reasoning agent;

    a code book based reasoning agent; and

    a case-based reasoning agent.

13.   (**Currently Amended**) A computer-implemented method ~~of~~ for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of network components, the service having a state, the method comprising:

    monitoring at least one aspect ~~or more aspects~~ of operation of one or more of the network ~~and~~ components;

    detecting ~~one or more~~ events ~~relative to~~ of in the ~~one or more aspects~~ monitored aspect of operation;

    generating alarms ~~an alarm for a respective aspect of network operation~~ as a function of the ~~respective~~ detected ~~one or more~~ events;

    analyzing ~~determining a relationship between~~ the generated ~~one or more~~ alarms ~~and determining~~ to determine a current state of the service ~~as a function of the relationship between the one or more alarms that originate from the subset of the plurality of network components~~; and

    issuing ~~generating~~ one or more instructions to autonomously establish a ~~desired~~ desirable state of the service when the current state of the service is undesirable.

14.   (**Cancelled**)

15.   (**Currently Amended**) The method according to claim 13, wherein the monitored aspects of operation include ~~further comprising monitoring~~ at least one of:

operation of the network infrastructure;

operation of at least one computer system on the network;

traffic on the network;

operation of at least one application operating on the network; and

operation of a trouble-ticketing agent ~~process~~ that receives reports of problems by users with respect to operation of the network;

operation of a device on the network;

a response time of a communication on the network; and

an aggregate of any of the above aspects of operation.

16.   **(Currently Amended)** The method of claim 13, wherein ~~the~~ generating the alarms includes ~~an alarm comprises~~ applying at least one of:

rule-based reasoning;

model-based reasoning;

state-transition graph based reasoning;

code book ~~codebooks~~ based reasoning; and

case-based reasoning.

17.   **(Currently Amended)** The method of claim 13, wherein ~~correlating~~ analyzing the generated ~~one or more~~ alarms ~~comprises~~ includes applying at least one of:

rule-based reasoning;

model-based reasoning;

state-transition graph based reasoning;

code book ~~codebooks~~ based reasoning; and

case-based reasoning.

18.   **(Currently Amended)** A computer-implemented method ~~of~~ for providing service level management in a network, wherein the network includes a plurality of network components,

and wherein a service operates on a subset of the plurality of network components, the service having a state, the method comprising:

monitoring a first aspect of operation of <u>one or more of</u> the network ~~and~~ components;

detecting ~~one or more~~ events ~~relative to~~ <u>in</u> the first <u>monitored</u> aspect of ~~network~~ operation;

<u>generating a first set of alarms as a function of the detected events in the first monitored aspect of operation;</u>

monitoring a second aspect of operation of <u>one or more of</u> the network <u>components,</u> <u>wherein the second aspect is</u> different from the first aspect[[, and]]<u>;</u>

detecting ~~one or more~~ events ~~relative to~~ <u>in</u> the second <u>monitored</u> aspect of ~~network~~ operation;

~~generating a first alarm as a function of the detected one or more events relative to the first aspect of network operation;~~

generating a second <u>set of alarms</u> ~~alarm~~ as a function of the detected ~~one or more~~ events ~~relative to~~ <u>in</u> the second <u>monitored</u> aspect of ~~network~~ operation;

sending the <u>generated</u> first and second <u>sets of</u> alarms to an alarm repository;

<u>analyzing at least</u> ~~accessing~~ the first and second <u>generated sets of</u> alarms ~~from~~ <u>in</u> the alarm repository<u>;</u> ~~determining~~ <u>to determine</u> a current state of the service ~~as a function of the accessed first and second alarms that originate from the subset of the plurality of network components~~; and

<u>issuing</u> ~~generating~~ one or more instructions to autonomously establish a ~~desired~~ <u>desirable</u> state of the service when the current state of the service is undesirable.

19.   **(Cancelled)**

20.   **(Currently Amended)**   The method of claim 18, wherein the one or more <u>issued</u> instructions control an <u>aspect of</u> operation of <u>one or more of</u> the network <u>components</u>.

21.   **(Currently Amended)**   A computer ~~program product comprising:~~

a computer readable medium having[[;]] computer program executable instructions recorded thereon on the computer-readable-medium, wherein the computer executable program instructions, when executed by a computer, directs the are operable to direct a computer to perform a method of for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of network components, the service having a state, the method comprising:

monitoring at least one aspect or more aspects of operation of one or more of the network and components;

detecting one or more events relative to in the monitored aspect one or more aspects of operation;

generating alarms an alarm for a respective aspect of network operation as a function of the respective detected one or more events;

analyzing the generated determining an association between the one or more alarms that originate from the subset of the plurality of network components and determining to determine a current state of the service as a function of the association; and

issuing generating one or more instructions to autonomously establish a desired desirable state of the service when the current state of the service is undesirable.

22.   (Cancelled)

23.   (Currently Amended) A computer-implemented system for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of components, the service having a state, the system comprising:

multiple monitoring agents that [[to]] each monitor a respective aspect of operation of one or more of the network components, wherein each monitoring agent detects one or more events relative to in the respective aspect of operation and generates alarms generate an alarm as a function of the one or more detected events[[;]],each monitoring agent including:

~~each monitoring agent including~~ an alarm correlation agent that receives the generated alarms in addition to ~~one or more~~ alarms generated by ~~from the~~ other monitoring agents ~~for consideration in generating the alarm as a function of the one or more detected events,~~ wherein the alarm correlation agent determines a current state of the service based on the received alarms; and

~~each monitoring agent including~~ a control agent ~~that issues one or more instructions regarding~~ controls the respective monitored aspect of operation, wherein the control agent issues one or more instructions regarding the controlled aspect of operation ~~of the network in order~~ to autonomously establish a ~~desired~~ desirable state of the service when the current state of the service is undesirable.

24.   (**Previously Presented**)   The system of claim 23, wherein the monitoring agents comprise at least one of:

an infrastructure monitoring agent to monitor operation of the network infrastructure;

a computer system monitoring agent to monitor operation of at least one computer system on the network;

a network traffic monitoring agent to monitor traffic on the network;

an application monitoring agent to monitor operation of at least one application operating on the network;

a trouble-ticketing agent to receive reports of problems by users with respect to operation of the network;

a response time monitoring agent to monitor a response time of a communication on the network;

a device monitoring agent to monitor operation of a device on the network; and

a multicomponent monitoring agent comprising an aggregate of any of the above monitoring agents.

25.   (**Currently Amended**) The system of claim 23, wherein the monitoring agents comprise reasoning agents, and wherein the reasoning agents comprise at least one of:

a rule-based reasoning agent;

a model-based reasoning agent;

a state-transition graph based reasoning agent;

a code book based reasoning agent; and

a case-based reasoning agent.

26.   (**Currently Amended**) A computer ~~program product comprising:~~

~~a computer~~ readable medium having[[;]] computer ~~program~~ executable instructions recorded thereon ~~on the computer readable medium~~, wherein the computer ~~program~~ executable instructions, ~~when executed by a computer,~~ are operable to direct each of a plurality of agents ~~the computer~~ to perform a method [[of]] for providing service level management in a network, wherein the network includes a plurality of network components, and wherein a service operates on a subset of the plurality of network components, the service having a state, the method comprising, ~~for each of a plurality of agents;~~:

monitoring at least one ~~or more aspects of the~~ respective aspect of operation of one or more of the network and components;

detecting ~~the one or more~~ events ~~relative to~~ in the respective monitored ~~one or more~~ ~~aspects~~ aspect of operation;

generating ~~an alarm for the respective aspect of network operation~~ alarms as a function of the ~~respective~~ detected ~~one or more~~ events;

communicating with ~~the~~ other agents to access events or alarms in ~~the~~ other respective monitored aspects of operation ~~of the other monitoring agent that originate from the subset~~ ~~of the plurality of network components, and~~;

analyzing at least the generated alarms and the accessed events or alarms to determine ~~determining an existence of an association between these events or alarms from other~~ ~~monitoring agents in the alarm generated for the respective aspect of network operation and~~ ~~determining~~ a current state of the service ~~as a function of the association~~; and

issuing ~~generating~~ one or more instructions to autonomously establish a ~~desired~~ desirable state of the service when the current state of the service is undesirable.